

Insulated Roof & Wall Panels

Product Data Sheet



Trapezoidal Secret-Fix (SF) Insulated Roof Panel
KS1000 DR/DRC

KS1000 DR/DRC Trapezoidal SF

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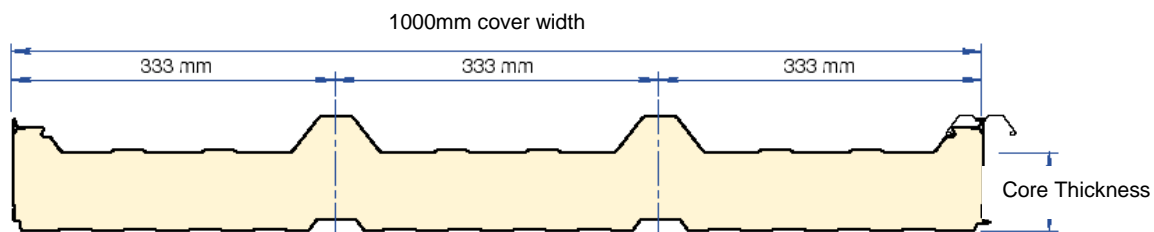
Applications

The KS1000 DR and KS1000 DRC are secret-fix trapezoidal profiled insulated roof panels. These systems are ideal for all applications where the roof pitch after deflection is 1.5° or more and on curved roofs with a minimum radius of 150 metres.

Available Lengths

Standard Lengths	1.8 - 12m
Longer Lengths (non-standard)	12 - 29m
Shorter Lengths (non-standard)	Below 1.8m

Note: Additional costs and transport restrictions may apply for non-standard lengths. All lengths may change for export (outside of the UK).



Dimensions, Weight & Thermal Performance

Core Thickness (mm)	40	50	60	80	100	115
Overall Thickness (mm)	75	85	95	115	135	150
U-value (W/m ² K)	0.46	0.38	0.31	0.25	0.21	0.18
Weight kg/m ² 0.5/0.4 Steel	10.0	10.5	10.9	11.8	12.7	13.4

The KS1000 DR/DRC insulated roof panels have a Thermal Transmittance (U value), calculated using the method required by the Building Regulations Part L2 (England & Wales) and Building Standards Section 6 (Scotland).

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Insulation Core

KS1000 DR/DRC insulated roof panels are manufactured with an ECOsafe and FIREsafe polyisocyanurate (PIR) core.

Fire

The external and internal faces of the panel to be Class 0 in accordance with the Building Regulations when tested to BS 476: Part 6: 2009 and Part 7: 1997. The panel is rated SAA when tested to BS 476: Part 3: 2004.

This FIREsafe system has passed all the requirements of LPS 1181: 2005: Part 1: Issue 1.1, ceiling lining tests by the Loss Prevention Certification Board (LPCB) certified to LPS 1181 Grade EXT – B (Certification pending for 115mm core).



Environmental

This ECOsafe system may achieve a Green Guide A + rating and is subject to project specific assessments.

Air Leakage

An air leakage rate of 3m³/hr/m² at 50Pa or less can be achieved when using Kingspan insulated roof and wall panels.

Acoustic

Sound Reduction Index (SRI)

Hz*	63	125	250	500	1K	2K	4K	8K
SRI (dB)	20	18	20	24	20	29	39	47

* Frequency

The KS1000 DR/DRC insulated roof panel has a single figure weighted sound reduction $R_w = 25\text{dB}$.

Biological

Kingspan panels are normally immune to attack from mould, fungi, mildew and vermin. No urea formaldehyde is used in the construction, and the panels are not considered deleterious.

Materials

Substrate

- Kingspan XL Forté, Kingspan Spectrum, Kingspan AQUAsafe, and Kingspan CLEANsafe: Material S220GD+ZA hot-dip zinc/aluminium Galvanneal coated steel to BS EN 10346: 2009 Standard external sheet thickness 0.5mm, standard internal sheet thickness 0.4mm.
- Bright White Polyester: Material Hot dip zinc coated to BS EN 10346: 2009, Standard internal steel thickness 0.4mm.
- Stainless Steel: Austenitic Grade 304 stainless steel to BS EN 10088: Part 2: 2005, thickness 0.4mm.
- Aluminium: Please contact Kingspan envirocare Technical Services.

Coatings - External Weather Sheet

- Kingspan XL Forté: Consists of a multi-layer organic coating, embossed with a traditional leather-grain finish.
- Kingspan Spectrum: Consists of a coated semi-gloss finish with slight granular effect.

Coatings - Internal Liner Sheet

- Bright White Polyester: The coating has been developed for use as the internal lining of insulated panels. Standard colour is "bright white" with an easily cleaned surface.
- Kingspan AQUAsafe: The coating has been developed for use as the internal lining of insulated panels to suit high humidity internal environments (class 5 as defined by the Building Regulations).
- Kingspan CLEANsafe: The coating has been developed for use as the internal lining of insulated panels where a high level of cleanliness and hygiene is required, and the panels are to be cleaned down on a regular basis.
- Stainless Steel: The stainless steel liner has been developed for use as the internal lining of insulated panels in buildings with a very aggressive/corrosive internal environment.

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Panel End Cut Back

Standard Cut Back Eaves	65mm
Standard Cut Back End Lap	100mm
Minimum Cut Back	25mm or Flush
Maximum Cut Back	100mm

Note: Additional costs apply for flush ended panels and tolerances will be greater. Information above is for KS1000 DR. For KS1000 DRC details, please contact Kingspan envirocare Technical Services.

Product Tolerance

Cut to Length	-4mm +4mm
Liner Sheet Length	-4mm +4mm
Cover Width	-2mm +2mm
Thickness	-2mm +2mm
End Square	-2mm +2mm

Handing

The KS1000 DR/DRC insulated roof panel can be manufactured in right to left handed (RH) only.

End Lap Plate

Factory fitted end lap stitching plates are required on the top edge of under-lapping panels at all end laps.

Cover Caps

Material	0.5mm, to suit weather sheet
Maximum Length	12m

Note: Available in plain ended for ridge to eaves in one length or joggle ended for when the cover cap is being end lapped due to multiple lengths up the slope.

Seals

Factory applied side lap and anti-condensation tape. End lap site applied sealant.

Quality & Durability

KS1000 DR/DRC insulated roof panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, complying with BS EN ISO 9001 standard, ensuring long term reliability and service life. The panels are also being manufactured under Environmental Management System Certification BS EN ISO 14001. Compliant to BS OHSAS 18001 Occupational Health and Safety.

Guarantee

Kingspan Total Panel Guarantee covering the structural and thermal performance for a period of up to 25 years and Kingspan Coating Guarantee for a period of up to 40 years (subject to project specific information).

Packing

KS1000 DR/DRC insulated roof panels are stacked weather sheet up. The top, bottom, sides and ends are protected with foam and timber packing and the entire pack is wrapped in plastic.

Core Thickness (mm)	40	50	60	80	100	115
No. of panels in Pack	16	15	14	11	9	8

Note: Applies to UK pack sizes. Please contact Kingspan Technical Services for export information.

Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional costs. Alternatively, steel containers can be used. Special loading charges apply.

Delivery

All deliveries (unless indicated otherwise) are by road transport to project site. Off-loading is the responsibility of the client.

Site Installation Procedure

Site assembly instructions are available from Kingspan envirocare Technical Services.

Structural Tables

Unfactored load/span table (use unfactored calculated design wind load values).

Outer Sheet 0.5mm (Steel), Inner Sheet 0.4mm (Steel)

Single Span Condition

Panel Thickness (mm)	Load Types	Uniformly distributed loads kN/m ²							
		Span L in metres							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Downwards	3.63	2.52	1.98	1.44	1.15	0.85	-	-
	Suction	4.04	3.36	2.94	2.36	1.97	1.57	-	-
50	Downwards	4.32	3.10	2.48	1.85	1.50	1.14	0.93	-
	Suction	4.78	4.04	3.57	2.99	2.52	2.05	1.76	-
60	Downwards	5.00	3.67	2.97	2.27	1.86	1.45	1.20	0.94
	Suction	5.53	4.47	4.21	3.65	3.11	2.56	2.21	1.86
80	Downwards	6.31	4.78	3.94	3.10	2.59	2.07	1.74	1.40
	Suction	7.03	6.15	5.53	4.90	4.28	3.66	3.20	2.73
100	Downwards	7.57	5.86	4.90	3.93	3.33	2.72	2.32	1.92
	Suction	8.49	7.53	6.82	6.11	5.25	4.39	3.84	3.28
115	Downwards	7.57	5.86	4.90	3.93	3.33	2.72	2.32	1.92
	Suction	8.49	7.53	6.82	6.11	5.25	4.39	3.84	3.28

Double Span Condition

Panel Thickness (mm)	Load Types	Uniformly distributed loads kN/m ²							
		Span L in metres							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Downwards	3.29	2.58	2.20	1.82	1.59	1.36	1.21	1.05
	Suction	3.43	2.74	2.38	2.02	1.80	1.57	1.43	1.28
50	Downwards	3.52	2.78	2.38	1.98	1.74	1.49	1.33	1.17
	Suction	3.67	2.96	2.58	2.20	1.97	1.73	1.58	1.42
60	Downwards	3.73	2.97	2.55	2.13	1.88	1.62	1.45	1.27
	Suction	3.91	3.17	2.77	2.37	2.12	1.87	1.71	1.54
80	Downwards	4.12	3.30	2.85	2.39	2.11	1.82	1.63	1.44
	Suction	4.37	5.58	3.14	2.70	2.43	2.16	1.98	1.79
100	Downwards	4.47	3.60	3.12	2.63	2.32	2.01	1.80	1.59
	Suction	4.77	3.93	3.46	2.99	2.70	2.40	2.20	2.00
115	Downwards	4.47	3.60	3.12	2.63	2.32	2.01	1.80	1.59
	Suction	4.77	3.93	3.46	2.99	2.70	2.40	2.20	2.00

Notes:

1. Values have been calculated using the method described in BS EN 14509: 2013, for medium and light coloured panels.
2. Deflection limit for: downward loading is L/200 and suction loading is L/150.
3. The actual wind suction load resisted by the panel is dependent on the number of fasteners used and the purlin thickness as well as the fastener material.
4. The fastener calculation should be carried out in accordance with the appropriate standards. For further advice please contact Kingspan envirocare Technical Services.
5. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm.
6. Load span tables for the panel specifications not shown are available from Kingspan envirocare Technical Services.

Kingspan Limited

Greenfield Business Park No.2, Greenfield, Holywell, Flintshire, North Wales CH8 7GJ

t: +44 (0) 1352 716100 f: +44 (0) 1352 710161 www.kingspanpanels.com

Registered Office at Greenfield Business Park No.2, Greenfield, Holywell, Flintshire, N. Wales CH8 7GJ. Company Reg. No. 1037468